AGE04-P14      :      :5    20    18:15-19:30

LEACHM

# Predicting nitrate leaching from cropped soils under different fertilization treatments using the modified LEACHM model

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Nitrogen (N) management strategies for reducing the ground water contamination around agricultural fields require precise prediction of N leaching using a process-based model. We modified LEACHM model for use in Andosols, which are characterized by slow soil organic carbon mineralization and nitrate adsorption. The modified model was able to improve the prediction of N leaching loss from Andosol with relative improvements 63.5% over the original model. In this study, further validation of the modified model was carried out using field data from a long-term N leaching experiment conducted on sandy-loam soil amended with N chemical fertilizer, cattle and swine manure. The modified model provided relatively accurate predictions of the measured N loss below the crop root zone as well as the measured inorganic N content in surface soils under different fertilization treatments.